

**ZMATH 2015c.01022**

**Sinclair, Nathalie; Pimm, David**

**Number's subtle touch: expanding finger gnosis in the era of multi-touch technologies.**

Nicol, Cynthia (ed.) et al., Proceedings of the 38th conference of the International Group for the Psychology of Mathematics Education “Mathematics education at the edge”, PME 38 held jointly with the 36th conference of PME-NA, Vancouver, Canada, July 15–20, 2014, Vol. 5. [s. 1.]: International Group for the Psychology of Mathematics Education (ISBN 978-0-86491-360-9/set; 978-0-86491-365-4/v.5). 209-216 (2014).

Summary: We explore a richer sense of finger gnosis with respect to three- and four-year-olds' interactions with a novel iPad application (TouchCounts), focusing on their responses to an “inverse subitising” task. The direct and tactile nature of their engagement with TouchCounts leads to a striking shift from index finger incrementation to deployment of several fingers all-at-once (in a cardinal touch gesture) to achieve a given target number that is then spoken by the iPad. This form of finger gnosis differs from the more ordinally based differentiation of fingers that is discussed in the psychology literature.

*Classification:* U71 F21 C51

*Keywords:* use of technologies; multi-touch technologies; gestures; interactions; counting